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ABSTRACT

A sample of 500 misspelled words was drawn from compositions written by students in third, fourth, and fifth grade. Errors were analyzed to indicate the type of misspellings that occur in writing connected discourse, to identify phonemes that cause particular spelling problems, and to identify typical error patterns. Results indicated that most of the errors were not random letter choices: only 28% of the errors were classified as unrecognizable. Two vowel phonemes caused problems out of proportion to the frequency of use and the regularity of their spelling; these were the long "e" and the short "e." The vowel phoneme that caused the most overall difficulty was the schwa, alone and in combination with "r." Other problems included not knowing when to use a diacritic (silent) "e" to end a word, and being unsure about when to double letters. (AA)

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MISSPELLINGS OF CHILDREN IN THE MIDDLE GRADES

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MISSPELLINGS OF CHILDREN IN THE MIDDLE GRADES

Studies in spelling have typically concentrated on methods of studying words and identifying commonly misspelled words. More recently researchers have attempted to identify what kinds of errors children make when they misspell. Evidence from these studies shows that young children represent sounds in writing in somewhat unique but very systematic ways. WOT U PLAY WF ME? illustrates the basic letter name technique used by pre-schoolers and first graders as they invent their own ways of writing down what they want to say.

An extensive study done by Read (1975) examined these early attempts at writing to see how children categorized sounds and found that the phonetic similarities perceived by the children were often different from the features adults used in categorizing sounds. Another study of first, second and third graders (Beers 1977) asked children to spell vowel sounds in familiar and unfamiliar words. The children seldom made random errors in spelling; in fact, they made only three basic types of spelling errors: using letter names (68%), adding an incorrect vowel (25%), and substituting one short vowel for another (7%).

Older children, too, reveal how they categorize sounds and how they think sounds should be represented by letters when they attempt to spell words. Information about the kinds of errors children make and the particular sounds that are most frequently misspelled can serve as a basis for a program of instruction. In the attempt to obtain such information, this study posed the following questions:

1. What types of misspellings do middle grade children (third, fourth, and fifth graders) make when writing connected discourse?
2. Are there some phonemes which cause particular spelling difficulties?
3. Are there any identifiable patterns of errors in the misspelled words?

PROCEDURES

Five hundred misspelled words were selected from compositions written by third, fourth, and fifth graders in the metropolitan Atlanta, Georgia area. These children were participating in a program of writing in various modes so that the focus during writing was on presenting ideas, not on spelling. The six hundred ten compositions written for this project were numbered and then individual papers were drawn using random numbers. As each paper was drawn, the misspelled words on it -- up to a limit of five words from any one paper--were selected for the study. These misspelled words were then categorized as shown in Table I. Sixty-four words contained more than one error so there are a total of 573 misspellings.

Table 1. Categories of Misspellings

Unrecognizable words	115
Homophones	42
Vowel representations	160
Consonant representations	92
Single letter errors	164

The words classified as unrecognizable were those that could not be identified positively and included such letter combinations as "ekere", "bureally", "oulte", and "goerhee". The words classified as homophones were pairs such as: "there" and "their", "too" and "to", "know" and "no", and also two pairs of words which are typically homophones for these children: "witch" and "which" and also "then" and

"than". The vowel representations were misspelled vowel sounds such as "servived" for "survived" or "feal" for "feel". Consonant representations were consonant sounds represented by incorrect letters such as "jym" for "gym" and "wach" and "cach" for "watch" and "catch". There were three kinds of single letter errors: reversals, omissions, and additions. Only one letter was involved in these misspellings that occurred when a letter was added or omitted at the end of the word or before an affix, when the letter involved a syllable omitted or added, when a double letter was involved, or when the letter was a diacritic letter. Examples of the reversals are "aslo" for "also", and "wrok" for "work"; omissions were words like "drivway" for "driveway", "realy" for "really" and "sumer" for "summer"; additions included such words as "ame" for "am", "unclets" for "uncles", and "gymn" for "gym".

FINDINGS

Analysis of each of the original categories revealed the following information. The most frequent errors, those of vowel representations, were further categorized into individual phoneme misspellings as shown in Table II. This revealed that certain sounds accounted for a large number of the errors.

Table II. Vowel Representation Errors

Phoneme	Key Word	Number	Percentage
/ə/	but	38	24%
/ɪ/	beet	25	16%
/ɛ/	pet	25	16%
/ɚ/	her	12	7.5%
/I/	hit	12	7.5%
/e/	hate	10	6%
/aI/	bite	8	5%

Phonene	Key Word	Number	Percentage
/ɑ/	father	8	5%
/ɔ/	law	7	4%
/æ/	fat	4	2.5%
/U/	good	4	2.5%
/u/	fool	3	2%
/o/	toe	3	2%
/j/	million	1	½%
			N = 160

Four of the vowel sound misspellings account for sixty-three percent of these errors: the long e /i/, the short e /ɛ/, the schwa /ə/, and the schwa plus r /ɚ/. The frequency of these vowel sounds in words in English and the number of graphemes which represent them does not account for such findings. Data from the Hanna, Hanna, Hodges and Rudorf study (1966) is used in Table III below to illustrate how unexpected the large numbers of short e and long e misspellings are. The Hanna study coded over 17,000 words, showing the graphemic representations for the various phonemes along with the frequency of each. This table includes only graphemic representations which occurred in more than ten words.

Table III. Phoneme-grapheme Correspondences for Selected Vowel Misspellings

Phoneme	Frequency Occurs	No. of Grapheme Representations	No. Misspellings in Present Study
short a /æ/	4,340	2	4
short i /I/	7,815	9	12
short e /ɛ/	3,646	4	25
long a /e/	2,248	10	10
long i /aI/	1,482	6	8
long e /i/	2,538	10	25

The short e /ɛ / which was misspelled 25 times by the children in this study is not particularly irregularly spelled when compared with the short i or short a sounds. In fact, with nine possible spellings for almost eight thousand words, the short i might be expected to cause the most trouble instead of the short e with only four possible spellings for not even four thousand words.

The long e / i /, which in this study was also misspelled 25 times by the children, was compared with the long a sound misspelled only 10 times. Both the long e and long a have ten possible graphemic representations and about the same number of words in which the sounds occur (2200 and 2500). The long e, however, was misspelled two and a half times as often.

In examining the homophone errors, three pairs of homophones were found to account for half of the errors: "to/too", "there/their", and "know/no". Although "to/too" was the most frequently misspelled homophone, there were no instances of the other homophone for this pair, "two", being involved. Table IV shows the homophone errors which occurred more than once. Other homophone pairs misspelled were: "then" for "than", "than" for "then", "vary" for "very", "hear" for "here", "by" for "buy", "ants" for "aunts", "blew" for "blue", "jim" for "gym", "reel" for "real", "new" for "knew", and "right" for "write".

Table IV. Homophone Errors Occurring More Than Once

Homophones	Number	Word Wanted	Spelled As
to/too	11	too	to
	1	to	too
no/know	4	know	no
there/their/they're	4	their	there
	1	they're	there
you/you're	3	you're	your
brake/break	3	break	brake
wood/would	2	would	wood
which/witch	2	which	witch

The single letter errors were an interesting group. Many of the errors here seem to indicate that children have trouble adding affixes and handling single and double letters. Table V indicates the kinds of errors in this category.

Table V. Single Letter Errors

Reversals	38
Omissions	89
of consonants	52
of vowels	37
of e	34
other	3
Additions	37
of consonants	20
of vowels	17
of e	17
other	0

Of the single letter errors, the most noticeable fact is the large number of errors involving the letter e. In the single letter omissions, all but three of the thirty-seven vowels were the letter e, and of the seventeen vowel additions, all seventeen were the letter e. Some of these might be expected like "rideing" for "riding", but not "hise" for "his".

Most of the single letter errors of omissions and additions occurred at the end of a word or involved double letters. Table VI shows the single letter errors which occur in these two positions.

Table VI. Single Letter Errors of Final and Double Letters

Final Letters	36
Omissions	21
Additions	15
Double Letters	43
Omissions	31
Additions	12
Other Errors of Omission or Addition	47

Some of the errors made by adding or omitting a letter at the end of a word or not knowing when to use a double letter were somewhat surprising considering how commonly used these particular words were. There were errors like:

Final Letters	Double Letters
ame for am	kepper for keeper
lote for lot	grennish for greenish
mor for more	dady for daddy
ar for are	hapy for happy
lik for like	

CONCLUSIONS

Although there are spelling errors which make the misspelled word unrecognizable, most of the errors made were not random letter choices. Only 23 percent of the children's errors were classified as unrecognizable; all the rest could easily be recognized like "chirldrin", "maby", "princeibles", "inbarrist", "spiecal", "intertaning", and "gradparers".

Certain phonemes present problems for these children all out of proportion to how often they are used and how regularly they are spelled. The two major vowel phonemes of this type are the long e / i / and the short e /ɛ /.

The vowel phoneme which causes the most difficulty is the schwa, alone and in combination with an r, /ə / and /ər /. This might be expected since the schwa has numerous spellings and occurs frequently in our language.

Some children had a great deal of trouble knowing when a word should end with a diacritic (silent) e and when it should not. They may not know the relationship of a final e with the preceding vowel, or may be overgeneralizing or misapplying some new information from their reading or spelling lessons.

Children in the study also showed that they are unsure about when to double letters and when to use a single letter. They have not developed a sense of whether or not the word looks right, or don't know the rules about when to double and when not to double letters, or are depending too much on 'sounding out'--an

ineffective strategy for this.

IMPLICATIONS

Many of the children's misspelled words showed evidence that the main strategy used by these upper graders was that of trying to sound out the unknown word. Because English often represents a particular sound by several different letters or combinations of letters, sounding out is not particularly effective. Various dialect pronunciations or simple mispronunciations interfere with the spellings of words; in addition, many of the common words used by these children come from old English words rather than from the more phonetically regular French and Latin borrowings. Since sounding out words is not entirely satisfactory, this suggests that they should be taught to use alternative strategies for spelling. They need to develop more of a sense of how words should look when written. "Does it look right?" should be heard as often in the classroom as, "Sound it out!"

If certain vowel sounds or consonant sounds are frequently misspelled by children, instruction should center on those particular sounds and how they are represented in writing. The schwa which caused these children so much trouble is most frequently spelled by an o, an a, or an i, with each letter used about as often as any of the others. Another of the sounds frequently misspelled by these children was the short e / ɛ / sound. This is actually very regularly spelled with the letter e 3,316 out of 3,646 words. The long e / i / sound that they misspelled so often is also regularly spelled with a letter e in 1,765 out of 2,538 words or by ee and ea in 249 and 245 words respectively. Teachers need to point out the letter or letters used to spell such sounds when one appears in words the children are using. They should present words for study which use the same letter to represent a certain sound, and give children accurate information about spelling rules. Then, too, children ought to be praised for using a logical, if not correct, choice.

There are certain spelling rules, or pieces of information about spelling, that can be very helpful when children are having a particular problem. If, for example, children have trouble knowing when to double a letter as these children did, they could be shown how the consonants f, l, k (becomes ck when doubled), s, and z are typically doubled in the middle and at the end of words having a short vowel sound. Examples are words such as: suffer and off, bully and ball, packer and lock, fussy and pass, and dizzy and fuzz. Most other consonants are doubled only in the middle of words with short vowel sounds. Examples of these are: supper and stop, rubber and jab, latter and rat, bidding and bad, buggy and rug, summer and rim, funny and fan, furry and far. (Brengelman 1970). Teachers should be very selective about which spelling rules they teach since many common generalizations do not work in a high percentage of cases.

Although there are many homophones in English which vary from dialect to dialect, there are only a few that appear to cause any significant number of spelling errors. Teaching can be concentrated on those that consistently cause problems with the others taught as they appear. Regular instruction on "to" and "too", "know" and "no", "there", "their", and "they're" would help this group of children a great deal. Since children appear to use the more common word of each pair to spell the other one, teachers might well point out homophones as they appear in reading or spelling, stressing the meaning of each and pointing out how the different spellings can help distinguish between different meanings.

Children in this study did make many errors in words that the authors believe they actually knew how to spell. This is particularly true of the reversals and some of the errors in adding or omitting letters as in "paly", "gril", "aslo", "mor", and "ame". Some of these errors may have occurred because the focus of their writing was on content, not on spelling. It is not a common practice, however, for teachers to ask children to re-read what they have written to check for errors of this kind. Making proof reading a habit would help children eliminate many of their own spelling errors.

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